# EVALUATION OF THE FAA RUNWAY SAFETY PROGRAM

**NAS Configuration Management and Evaluation Staff**
**Program Evaluation Branch (ACM-10)**

**REPORT #2002-20**

**September 30, 2002**

# EXECUTIVE SUMMARY

The 2000 National Blueprint for Runway Safety committed the Office of Runway Safety to conduct annual reviews of its Runway Safety Program. The NAS Configuration Management and Evaluation Staff, Program Evaluation Branch (ACM-10) was asked to conduct the 2002 evaluation. In addition, Runway Safety is an element of a Department of Transportation Performance Goal.

Runway safety has been a high priority at the FAA since the early 1990's, and was enhanced with the creation of the ARI organization in 1999. Many initiatives have been established, and many were completed or are still ongoing efforts. When the current Office of Runway Safety (ARI) was established, representatives from lines of business were detailed to ARI to represent their organization. A Runway Safety Blueprint was developed in 2000, and an update was done for 2002-2004. In addition, an outdated Runway Safety Order 7210.58 was updated as Runway Safety Order 7050.1, which will take effect November 1, 2002.

The objective of this evaluation is to assess the effectiveness of FAA's internal mechanisms designed to accomplish its runway safety goals.

The evaluation focuses primarily on the internal FAA component of the Runway Safety Program. It does not include correlating the reduction of runway incursions with the completion of particular runway safety initiatives. Because of a September 30, 2002, deadline for report submission, data collection was limited to June-August 2002.

Data collection was accomplished via document review and interviews. The data analysis process consisted of aggregating interview data, identifying trends at different levels (headquarters, regions, and field), and then finding the general trends. This information was the source of the findings and recommendations below.

**Findings And Recommendations**
Data analysis suggests two major findings:

**Finding #1:** The Runway Safety Program, as led by ARI, is making steady progress in developing internal mechanisms for achieving runway safety goals.

**Finding #2:** The majority of personnel interviewed at all levels expressed support for the runway safety initiatives. However, the priority of the Runway Safety Program varies among respondents based on the individual's roles and responsibilities.

**Finding #1**
Respondents differ along the lines of organizational structure, expectations in specific roles and responsibilities, and overall communications among the offices and individuals. It should be noted that the current Runway Safety Program is relatively young and is in the early stages of formalizing its policies and procedures. The Runway Safety Program has a very complex organizational structure that is inherent within the FAA structure. Some specific observations follow.

**Conclusions:**
- Over half of the interviewees expressed a lack of consistent direction and guidance, which is exacerbated by the cumbersome organizational structure.
- The 2000 Blueprint did not provide consistent, detailed direction and guidance initially anticipated. However the 2002 Blueprint will address that issue.
- The 1999 Runway Safety Order 7210.58 did not provide relevant direction and guidance once the runway safety office was reorganized in April 2001. The revised order reflects this newer structure.
- Regional runway safety programs have evolved autonomously, thereby contributing to the lack of cohesion for FAA's Runway Safety Program.

**Recommendations:**
ARI should:
- Lead an effort to develop a standard runway safety message that aligns with the program's goals and objectives. The 2002 Blueprint, updated Runway Safety Order 7050.1, and runway safety implementation plans should provide the basis for developing a single voice for the runway safety program. Suggested actions include:
  - Developing standard talking points for all executives to ensure the runway safety message is consistent
  - Improving effectiveness of the weekly teleconferences and Quarterly Program Reviews.
  - Ensuring for provision of the new Runway Safety Order 7050.1 and the 2002-2004 Blueprint to all headquarters LOB members listed in the Runway Safety Order 7010. RRSPMs should make a wide distribution within their region, including one copy to each airport, tower, and FSDO.
- Clarify authority within the ARI headquarters office to improve efficiency and eliminate potential miss-steps, redundancies, or having to renege on commitments. Suggested actions include:
  - Documenting all roles and responsibilities of everyone within ARI HQ in an ARI Program Plan.
- Conduct a staffing analysis to determine the optimal staffing at all levels of the runway safety program.

- Establish an FTE within the management team for the Integrated Team for Runway Safety (ITRS) Manager (ARI-100) position to ensure continuity and minimize disruption.
- Along with RRSPMs, spend more time visiting regions and facilities to observe runway safety progress and gain further insight into the workings in the field.
  - These visits should be discussed and planned during the annual program planning conferences and included in yearly plans, either specifying particular facilities to visit or a number of sites to be visited.
  - Visitors should communicate the runway safety program goals, and address any concerns in the field, to ensure there are no surprises and that goals are aligned between headquarters and LOB personnel in the field.

**Finding #2**
Most of the personnel interviewed at all levels expressed support for runway safety initiatives. However, this support varied among particular goals and objectives of the Runway Safety Program and priority levels. At ARI headquarters, runway safety is the primary focus, while for most personnel in the regions and the field, runway safety is just one of many safety responsibilities.

**Conclusions:**
- Commitment at headquarters level is heavily dependent on the ARI management team's credibility and ability to build relationships with the LOBs
- Commitment at the regional level is heavily reliant on the RRSPMs' credibility and ability to build relationship with regional LOBs.
- Commitment also varies among regional LOB reps, depending on what's heard from their headquarters organizations.
- At facilities, while runway safety is of utmost importance, it is just one aspect of the overall safety program.

**Recommendations:**
ARI should:
- Promote the rollout and acceptance of Runway Safety Order 7050.1.
  - In conjunction with LOB managers, they should develop a plan for management to convey the importance of runway safety to personnel at all levels of the Runway Safety Program.
- Continue to use a collaborative development process used during development of the 2002-2004 Blueprint and the Runway Safety Order 7050.1 for subsequent changes to the Order and the Blueprint.
- Along with the RRSPMs, establish an outreach effort with the FAA organizations in the Runway Safety Program so personnel will better understand the perspective of others within the program:

- o During site visits, ARI personnel should convey their perspective to regional and site personnel. Conversely, regional and field personnel need to enlighten visitors as to all their non-runway priorities.
- o Allow regional and field personnel to spend time at headquarters shadowing ARI management and staff to better understand priorities at headquarters, especially within ARI. These visits should be discussed and planned during the annual program planning conferences and included in yearly plans.
- Along with the RRSPMs, consider requiring RSAT members be detailees.

## Summary

In summary, the evaluation, which took place over a five-month period, provided useful insights into the functioning of the Runway Safety Program. Data and analysis suggest that the Runway Safety Program is striving towards successfully meeting runway safety goals. The analysis suggests that the program is making significant progress and that there is extensive support for runway safety initiatives at all levels of the organization.

In addition to the two major findings discussed in some detail above, the evaluation team observed a number of positive initiatives already underway that solidify policies and procedures for the program:
- In conjunction with the involved LOB, ARI has begun preparation of implementation plans for all the objectives described in the 2002-2004 Blueprint.
- Regional Runway Safety Program Managers (RRSPM) have begun working with LOB representatives in their region and with ARI to develop implementation plans for site-specific regional activities.
- The Office of Runway Safety has instituted new briefing and reporting mechanisms to ensure the Administrator and Lines of Business management are kept regularly informed of status and issues relative to runway safety initiatives.
- Standard Operating Procedures and checklists are under development by ARI and the RRSPMs.
- ARI and the RRSPMs have begun evaluation of their current weekly teleconference and quarterly program review structure to increase the value to all participants.
- Training is underway for regional and headquarters personnel for their recently developed database system.

The evaluation team noticed that the current Runway Safety Program is relatively young and is in the early stages of formalizing its policies and procedures. It has a very complex organizational structure that is inherent within the FAA structure. Ongoing initiatives and efforts should go a long way to moving the program towards maturity.

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# INTRODUCTION

## Background of The Evaluation

The 2000 National Blueprint for Runway Safety committed the Office of Runway Safety (ARI) to conduct annual reviews of its Runway Safety Program. In 2001, ARI hired a contractor to conduct the first of these annual reviews that assessed the program management effectiveness of the Runway Safety Program and provided a report with specific findings based upon that assessment. The NAS Configuration Management and Evaluation Staff, Program Evaluation Branch (ACM-10) was asked to conduct the 2002 annual evaluation.

Increasing runway safety is one of the FAA Administrator's top 5 goals, and a Department of Transportation (DOT) performance goal. Specifically, the DOT goal states "by 2007, reduce the commercial aviation fatal accident rate per 100,000 departures by 80 percent, from a three-year average baseline (1994-1996)." The goal also instructs FAA to "reduce general aviation fatal accidents." This evaluation report submitted to DOT, through ARI, meets the requirement for an annual evaluation. This evaluation may be designated a baseline that could be used yearly by ARI to measure progress.

## Background of The Runway Safety Program Organization

Since 1990 the Federal Aviation Administration (FAA) has initiated a series of action plans and initiatives to address the problem of runway incursions. Action plans were written and updated in 1991, 1995, and 1998. On June 30, 1999, a Runway Safety Program Order 7210.58 was released to formalize the roles and responsibilities of participants in the program. Throughout the 1990's, more than 261 initiatives were established. In 1999, the Administrator decided that the agency's runway safety activities needed to be redirected and escalated to foster an agency-wide approach, with a higher profile, more resources, greater reach, and executive commitment and oversight. At that time, the Administrator appointed a Director of Runway Safety to serve as the focal point for all runway safety activities across the agency. In September 1999, the current Office of Runway Safety (ARI) was established within the Air Traffic Services Organization (ATS), and a program charter and mission statement were established. Shortly thereafter, representatives from several organizations within the FAA were assembled to form the Integrated Team for Runway Safety (ITRS). Eventually teams, including members from both government and industry, were formed to provide recommendations for increasing runway safety and developing implementation plans. The first *National Blueprint* for Runway Safety was developed

and issued in October 2000 to provide a guide by which the Runway Safety Program will achieve a measurably safer runway environment. An updated version, entitled *The 2002-2004 Runway Safety Blueprint*, dated July 2002, has been issued and defines the Runway Safety Program's strategy and prioritizes the program's efforts to reduce runway incursions. To reflect the program established in 1999, the Runway Safety Order has been re-written, and will take effect on November 1, 2002.

The timeline below (Figure 1) highlights the significant dates for runway safety action plans and initiatives in the FAA over the past 12 years.

**Figure 1, Office of Runway Safety Timeline**
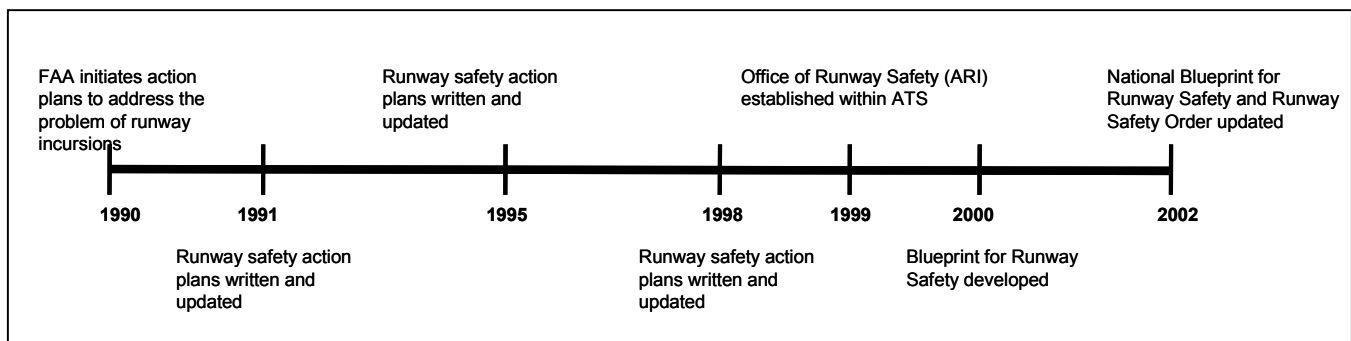


## Objectives

The goal of this evaluation is to assess the effectiveness of FAA's internal mechanisms designed to accomplish its runway safety goals.

This includes determining if:
- The Runway Safety Office is organized in a way that facilitates accomplishment of runway safety initiatives.
- Roles and responsibilities are defined and understood by all participants.
- Communication paths are sufficient, and used at the appropriate times.
- The LOBs are committed to the Runway Safety Program at all levels.

## Constraints

This evaluation does not fully reflect the impact of the 2002 version of the Blueprint and the revised Runway Safety Order 7050.1 upon the Runway Safety Program. Both documents were distributed as the data collection phase was ending in August. In addition, the team was further restricted to a September 30, 2002 deadline by DOT.

This evaluation did not include correlating the reduction of runway incursions with the completion of particular runway safety initiatives.

In order to honor union requirements, the evaluation team did not request interviews with any controllers. The evaluation team specifically set up interviews with tower managers to gather input on tower operations with respect to runway safety.

## Scope

The ACM-10 evaluation team focused primarily on the internal FAA component of the runway safety initiatives. The only people outside of FAA (and FAA support contractors) that were interviewed were airport managers. This was because they are responsible for vehicle operations on the surface, and also work closely with the tower managers.

# DATA COLLECTION AND ANALYSIS METHODOLOGY

Data Collection was accomplished via document reviews and interviews. The data analysis process consisted of aggregating interview data, identifying trends at different levels (headquarters, regions, and field), then finding the general trends. This information was the source of the findings and recommendations found later in this report. Figure 2 provides a graphic of this process.

**Figure 2 - Runway Safety Evaluation Methodology**
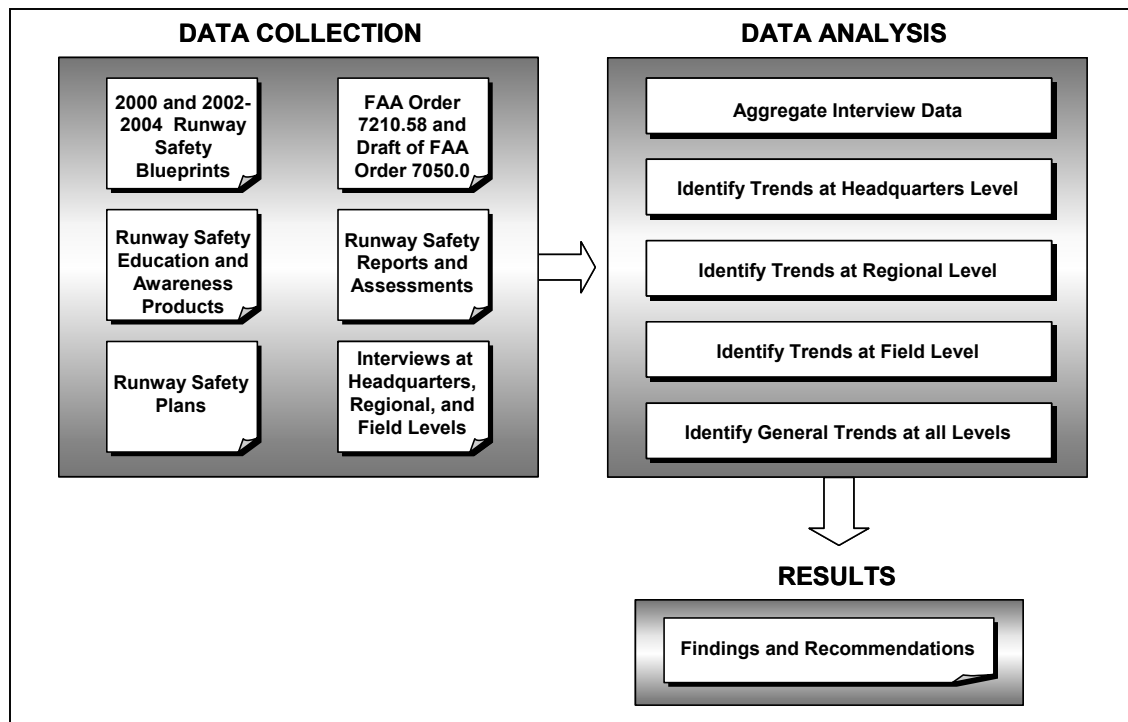


## Data Collection Methodology

Most of the data was collected from interviews with both individuals and groups, depending on the circumstances. Some information was also gathered through documentation review. The data on operations within the Runway Safety Program was collected during the months of June through August 2002.

Since many organizations and individuals are involved with runway safety initiatives, the evaluation team collected data at the Headquarters, Regional, and Field levels.

At headquarters, ARI management and staff, and people within the Lines of Business (LOB) and organizations who are the main contacts for runway safety initiatives were interviewed.

For regional data collection, only selected regions were identified for travel because of the limited time frame for data collection.  Four regions (Eastern, Great Lakes, Southern, and Western Pacific) were selected for on-site visits based on the highest number of runway incursions based on data from 1997 through May 2002.  In addition to the Regional Runway Safety Program Managers (RRSPMs), the evaluation team spoke with the Regional Administrator when available, the Runway Safety Action Team (RSAT) members, and the Regional Safety Program Managers (RSPM) from Flight Standards.

At the Field level, the team met with Flight Standards District Office (FSDO) personnel, and the tower managers and airport managers at selected airports in each of the visited regions.  In addition to these visits, the evaluation team spoke with the RRSPMs in the remaining 5 regions via teleconference to get their input.

A total of 134 individuals were interviewed for this analysis, with 29 from headquarters, 35 from the regions, and 70 from the field.  The chart in Appendix A shows a more detailed breakdown of organizations represented in the data collection.


## Data Analysis Methodology

Data analysis was conducted as a multi-step process.  First, individual or group interview data were aggregated into categories based on their runway safety roles and responsibilities, looking for both common themes and relevant individual input.  The next step was to combine categorized data into the following groupings - Headquarters, Regional, and Field, again looking for common themes and relevant individual input.  In some areas, it was difficult or even impossible to discern commonalities.  A more detailed picture of the data aggregation process is presented in Appendix B.

The final analysis step was to try to discern a general observation that could incorporate the perceptions of people representing all three levels.  In some cases, there were clear trends or commonalities (e.g., Staffing concerns adequate in HQ's but not in the regions or facility levels; the Blueprint is most applicable at the HQ level, familiar at the Regional Level, and non-existent at the facility level).  See Appendix C:  Detailed Summary Matrix.  In other cases, only one or two people in the Regions or Headquarters expressed a concern in certain areas (e.g., need for an RSP at every FSDO; need for equitable consequences for the three categories of runway incursions.)  This illustrates the array of needs of particular regions and facilities.  It is recommended that the reader consult the detailed summary matrix in Appendix D for more complete information.

# FINDINGS

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**Finding #1**
The Runway Safety Program, as led by ARI, is making steady progress in developing internal mechanisms for achieving runway safety goals.

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**Introduction**

The Runway Safety Program is a young program that has managed to achieve several of its runway safety goals despite the organizational and process impediments it faces. As a new organization matures, it goes through several phases of maturity. The initial phase, which the Runway Safety Program has already completed, entails a period of intense growth, attempting to solidify its service or message, and has only some basic policies. The second phase, which the program is currently working through, entails facing regular change and expansion, while policies, procedures, and rules begin to be formalized. Once that is complete, organizational development, policies and procedures will be institutionalized. The organization's efforts will shift from defining policies and procedures to providing its service or message. The Runway Safety Program is taking proper steps to be able to carry out runway safety initiatives in an optimal manner.

**Organization**

<u>Overview</u>

Overall, the current structure within the Runway Safety Program, which is inherent within the FAA structure, makes achieving runway safety goals very challenging. The office is responsible for implementing agency-wide runway safety initiatives even though it resides in the Air Traffic Services Line of Business. Without formal lines of authority between the office and other Lines of Business with a major stake in runway safety, its director and staff have had to rely on informal lines of communication and coordination to implement its initiatives. However, runway safety personnel at all levels have adapted to the current situation and remained flexible as improvements are made.

<u>Headquarters</u>
Current Organizational Structure:
- ARI is located within the ATS line of business (see Figure 3) and reports to the Associate Administrator for Air Traffic Services

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- The Integrated Team for Runway Safety (ITRS), the operational arm of the runway safety office, is composed of full-time LOB detailees that serve as liaisons between the LOBs and ARI to accomplish runway safety initiatives. The ITRS manager is also a detailee, but is not a LOB liaison (see Figures 3 and 4)

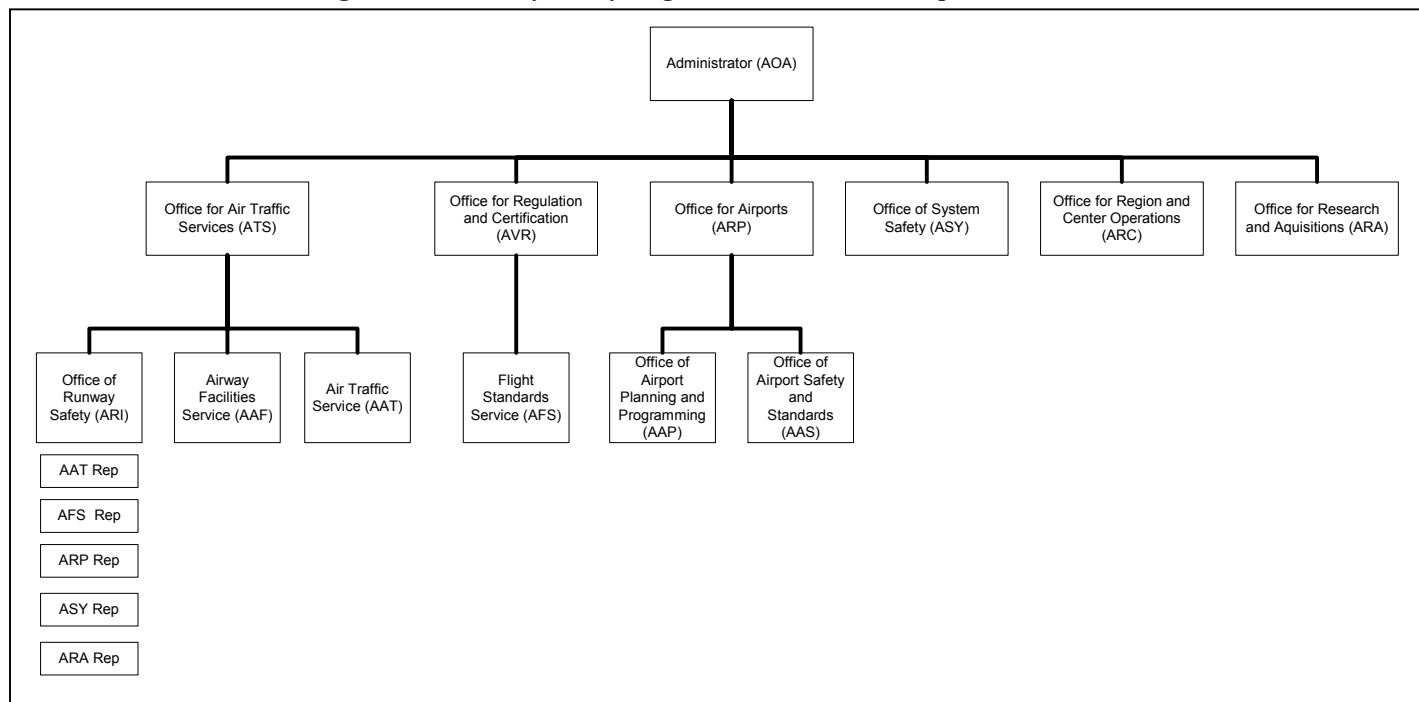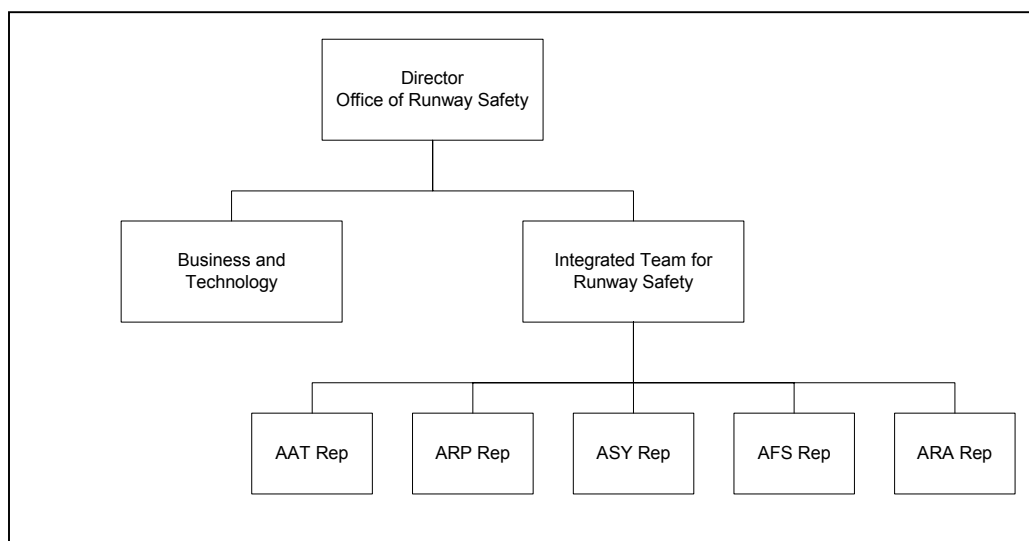**Figure 3    Runway Safety Organization Chart- Headquarters Level**



**Figure 4 – ARI Headquarters Organization**
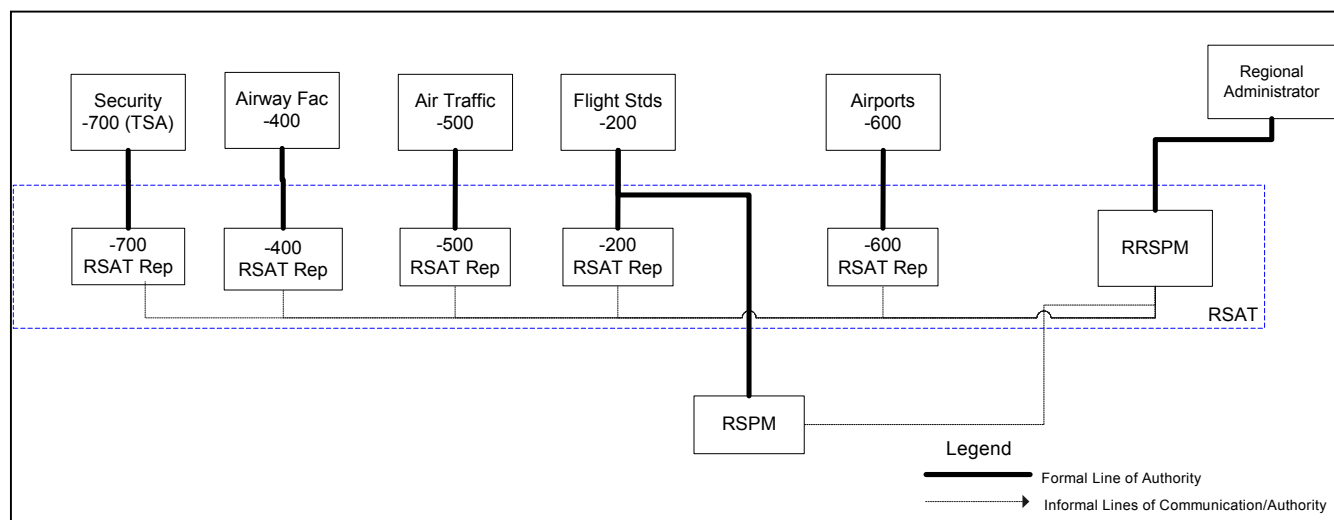
Issues with Current Structure:
- Since ARI is located within ATS,
  - It does not have organizational authority over the other lines of businesses to accomplish specific runway safety initiatives.  ARI members must use their personal influence to encourage LOBs to accomplish runway safety initiatives.
  - Approximately one-third of the respondents at headquarters and in the regions felt the current organizational position of ARI adds additional complexity to their mission to coordinate across a variety of Lines of Business and regions.  However, the new Runway Safety Order should provide more formal structure to ARI's communication with other Lines of Business.
- Since ITRS members are detailees,
  - The LOB liaisons report to 2 organizations, ARI and their specific LOBs. About two-thirds of the detailees felt it created confusion and frustration.
  - The rotation of people in and out of the ITRS manager position (ARI-100) can be disruptive to the achievement of runway safety goals.  Runway Safety participants outside of ARI perceive this turnover to be a source of the inconsistency they have experienced in ARI guidance and focus.
- The division of labor among ITRS members is uneven
  - AAT and AFS ITRS members have a higher percentage of runway safety initiatives to oversee than other ITRS members, which means expectations for AAT and AFS may be unreasonable.  In the 2002-2004 Blueprint, AT and FS lead or co-lead 22 of the 39 (56%) objectives, and the remaining 17 (44%) objectives are divided among 4 other organizations – ARI, Airports, AND, and RAs.

Regions

Current Organizational Structure (see figure 5 below):
- The Regional Runway Safety Program Manager (RRSPM):
  - is a headquarter's employee
  - is assigned to work in the region
  - reports directly to the Regional Administrator
  - achieves buy-in for the regional runway safety program initiatives from the regional LOBs because he/she is co-located in their region
- The RRSPM manages a team of regional LOB employees known as the Runway Safety Action Team (RSAT).  The RSAT is composed of some detailees and some LOB reps that have runway safety as one of their collateral duties.

**Figure 5 - Runway Safety Organization Chart- Regional Level**
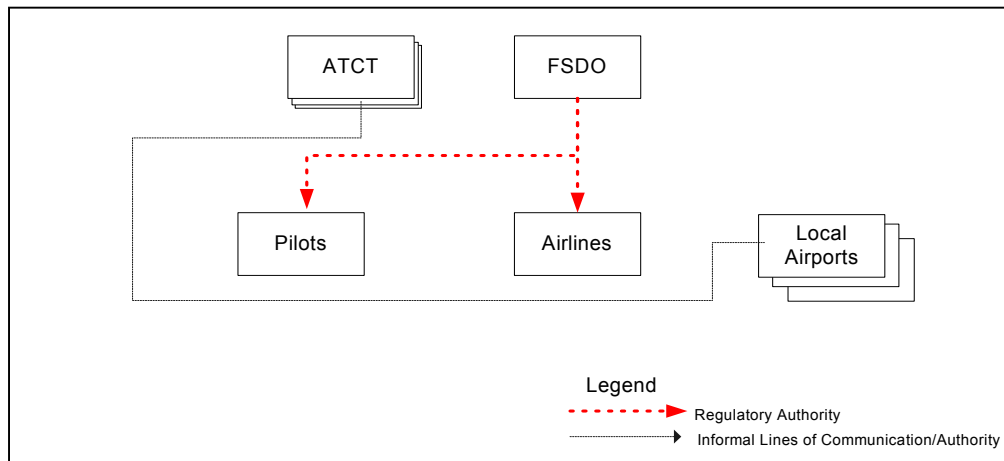


Issues with current structure:
- RRSPMs essentially serve under 3 managers – their Regional Administrator, ARC, and ARI.  At times, these three have different priorities and provide different guidance.  This ultimately creates confusion and frustration amongst the RRSPMs.
- Representatives from the ATS, AVR, and ARP LOBs in the region are "straight-lined" to headquarters, thus the Regional Administrator has no authority over the regional LOBs.  This means the RA and the RRSPM must use their relationships/influence with the regional LOBs to encourage the accomplishment of runway safety goals.  In addition, the LOB reps often receive conflicting messages from their RA and their LOB management.
- The majority of interactions about runway safety goals occur between ARI and the LOBs at the headquarters level.  Consequently, regional runway safety plans tend to focus on local issues and don't necessarily align with the National Blueprint for Runway Safety.
- Staffing for runway safety initiatives within the regions varies, thus impacting each region's ability to implement runway safety initiatives.  More than half of the interviewees stated that they needed more staff in their regions in order to accomplish runway safety goals.

Facilities

Current Organizational Structure (see figure 6 below):

- The Air Traffic Control Tower Manager reports to the regional Air Traffic LOB and guidance regarding runway safety initiatives comes from the Regional Air Traffic Manager.  Tower Managers are often the single focal point at an airport for all FAA safety initiatives and are a critical participant in achieving runway safety goals.
- Flight Standards District Office Managers report to regional Flight Standards LOB
- The Airport Managers are independent of the FAA.  While they are outside the organizational structure of the FAA, they play a critical role in runway safety through their management of vehicle operators, access to airport property, and design of runways, taxiways, and aprons.  Federal Aviation Regulations and airport certificate requirements drive airport manager participation in runway safety initiatives.
- In most cases, there is a close working relationship between Airport Management and the Tower Manager.

**Figure 6 - Runway Safety Organization Chart- Facility Level**



Issues with current structure:
- Not all FSDOs have Safety Program Managers to spread the runway safety message within their districts, which means fewer airmen receive runway safety information.

**Roles and Responsibilities**

<u>Introduction</u>

For some time, confusion and frustration existed within the Runway Safety Program due to the uncertainty of roles and responsibilities of the organizations and personnel involved in accomplishing runway safety initiatives.  Recent efforts such as the

publication of the 2002 Runway Safety Blueprint and the update of the Runway Safety Order have the potential to clarify roles and responsibilities, therefore making it more efficient to achieve runway safety goals.

<u>Mechanisms</u> put in place to clarify roles and responsibilities:
- In 1999, a Runway Safety Order 7210.58 was written to define roles within the runway safety program.
- In 2000, the first Runway Safety Blueprint was developed based on thousands of suggestions from the aviation community.  This document listed the goals, objectives, milestones, and critical success factors for the runway safety program.

<u>Issues</u> with 1999 Order and 2000 Blueprint:
- The Runway Safety Program was reorganized in April 2001, making the Runway Safety Order outdated.  Since participants at the region and facility level rely on FAA orders to structure their operations, there was confusion at these levels in trying to accommodate changes in the agency's Runway Safety Program.
- While the 2000 Runway Safety Blueprint stated the goals and objectives of the runway safety program, it did not specify which organization was responsible for accomplishing the specific initiatives.  This caused confusion about each LOB's role within the safety program, and led to inaccurate and unfair expectations from many participants.
- Since the LOBs were not tasked to accomplish specific runway safety goals, and lower levels of planning were not formally accomplished, nobody was held accountable for incomplete runway safety initiatives.  This also made centralized tracking of progress difficult.
- Because of a lack of clarity on roles and responsibilities, ARI personnel sometimes made commitments for which they did not have the knowledge or authority to make. This placed ARI in the position of not being able to follow through with commitments.

<u>Current initiatives</u> ARI has undertaken to delineate Roles & Responsibilities:
- The newly released 2002-2004 Runway Safety Blueprint specifies roles and responsibilities for accomplishing runway safety goals.
- For each initiative, the responsible LOB will work with ARI management to develop implementation plans for accomplishing runway safety initiatives.  This will help solidify roles and responsibilities as they relate to specific runway safety initiatives.
- For regional initiatives, the RRSPMs will work with ARI management to develop implementation plans for regional runway initiatives.  This will help solidify roles and responsibilities, and document the link between the regional efforts and the national runway safety initiatives.
- An updated Runway Safety Program Order 7050.1 will take effect on Nov 1, 2002. This should also help runway safety participants know what is expected of them,

and provide some standardization for particular events and products.  This should lead to greater efficiency.

**Communication**

<u>Introduction</u>

Communication among the participants of the Runway Safety Program is complex and includes informal and formal communications paths, both horizontal and vertical.  A variety of mechanisms are currently in place to communicate ARI's runway message within the Runway Safety Program.  As figure 7 (below) illustrates, communication within this program is very challenging.

**Figure 7 - Runway Safety Program Lines of Communication**
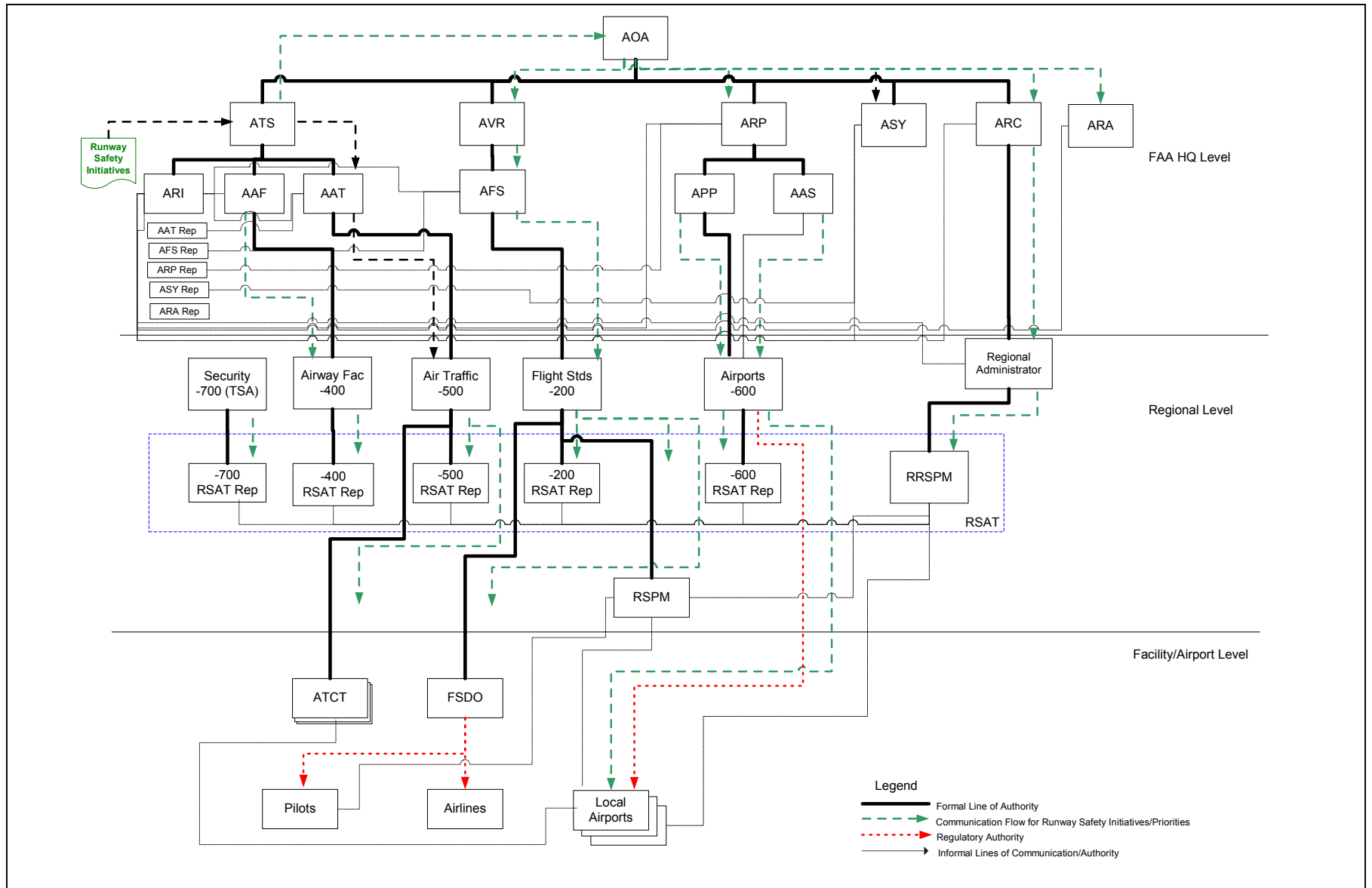
<u>Mechanisms</u> put in place to facilitate communication:
- The 2002-2004 Runway Safety Blueprint communicates the goals and objectives of the runway safety program.  It also assigns tasks to the LOBs
- The Runway Safety Order 7050.1 defines the horizontal and vertical interfaces within the current Runway Safety Program.  The order requires each LOB to designate a primary point of contact for Runway Safety and to establish implementation plans with ARI to address assigned initiatives identified in the Runway Safety Blueprint
- The weekly teleconferences with ARI and the RRSPMs and their Quarterly Program Reviews were established to give the RRSPMs and ARI headquarters personnel a forum to discuss issues and progress of the runway safety program.
- Other members of the Runway Safety Program, such as Regional Safety Program Managers, have periodic forums where they can share best practices and lessons learned.

<u>Issues</u> with previously mentioned communication mechanisms
- The 2000 Blueprint was developed with input from people within the aviation community.  However, it was not extensively coordinated with the responsible LOBs, regions, or facilities prior to its release.  Since the regions were not given specific responsibilities related to the 2000 Blueprint, regional runway safety plans were developed based on the needs of local airports.  Personnel at approximately two-thirds of the facilities visited by the evaluation team either had not even heard of the Blueprint, or if they knew of its existence, had never seen it.
- 2000 Blueprint did not clearly specify roles and responsibilities, thus it was difficult to determine the appropriate lines of communication.  The lack of delineation of roles and responsibilities led to confusion about who were the appropriate points of contacts.
- The outdated Runway Safety Order caused confusion at all levels of the runway safety program because it did not reflect the change in the structure and interfaces of the Runway Safety Program.  For example, RRSPMs didn't know who to listen to when they received varying directions from RA and ARI headquarters.
- ARI had to use informal lines of communication to encourage the LOBs to accomplish runway safety initiatives.
- Many participants felt the weekly teleconferences were more administrative rather than a venue to share best practices and lessons learned.  Most issues were discussed "off-line," thus the teleconferences were not always a valuable use of time.
- Roughly 20% of the interviewees at the regional level do not have a forum for sharing lessons learned, thus can be 're-inventing the wheel" which is an inefficient use of runway safety resources.  This was also mentioned at approximately 10% of the facilities.

<u>Current initiatives</u> ARI has undertaken to facilitate communication
- LOBs and RRSPMs were given opportunities to provide input into the 2002 Blueprint, thus increasing their buy-in and familiarity with runway safety goals.
- The updated Runway Safety Order 7050.1 will provide a more formalized structure to ARI's communications with other lines of business (AVR, ARP, ARA) and provide the opportunity to improve the effectiveness of their interactions.
-  ARI management is currently working with LOBs and RRSPMs to develop implementation plans that will facilitate communication amongst those parties and document ownership of specific runway safety initiatives.
- ARI and the RRSPMs are currently discussing ways to make the weekly teleconferences more substantial.


**Conclusions**

- Over half of the interviewees expressed a lack of consistent direction and guidance, which is exacerbated by the cumbersome organizational structure.
- The 2000 Blueprint did not provide consistent, detailed direction and guidance initially anticipated.  However, the 2002 Blueprint will address that issue.
- The 1999 Runway Safety Order 7210.58 did not provide relevant direction and guidance once the runway safety office was reorganized in April 2001.  The revised order reflects this newer structure.
- Regional runway safety program have evolved autonomously, thereby contributing to the lack of cohesion for FAA's Runway Safety Program.

**Recommendations**

- ARI should lead an effort to develop a standard runway safety message that aligns with the program's goals and objectives.  The 2002 Blueprint, updated Runway Safety Order 7050.1, and runway safety implementation plans should provide the basis for developing a single voice for the runway safety program.  Suggested actions include:
  - Developing standard talking points for all executives to ensure the runway safety message is consistent
  - Improving effectiveness of the weekly teleconferences and Quarterly Program Reviews.
  - Ensuring for the provision of the new Runway Safety Order 7050.1 and the 2002-2004 Blueprint to all headquarters LOB members listed in the Runway Safety Order 7010.  RRSPMs should make a wide distribution within their region, including one copy to each airport, tower, and FSDO.
- ARI managers and staff should clarify authority within the ARI headquarters office to improve efficiency and eliminate potential miss-steps, redundancies, or having to renege on commitments.  Suggested actions include:

- Documenting all roles and responsibilities of everyone within ARI HQ in an ARI Program Plan.
- ARI should conduct a staffing analysis to determine the optimal staffing at all levels of the runway safety program.
- Establish an FTE within the management team for the Integrated Team for Runway Safety (ITRS) Manager (ARI-100) position to ensure continuity and minimize disruption.
- ARI managers and staff and RRSPMs should spend more time visiting regions and facilities to observe runway safety progress and gain further insight into the workings in the field.
    - These visits should be discussed and planned during the annual program planning conferences and included in yearly plans, either specifying particular facilities to visit or a number of sites to be visited.
    - Visitors should communicate the runway safety program goals, and address any concerns in the field, to ensure there are no surprises and that goals are aligned between headquarters and LOB personnel in the field.

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**Finding #2**

The majority of personnel interviewed at all levels expressed support for the runway safety initiatives.  However, the priority of the Runway Safety Program varies among respondents based on the individual's roles and responsibilities.

</div>

**Introduction**

A majority of personnel interviewed at all levels expressed support for runway safety initiatives.  However, there was not necessarily support for particular goals and objectives of the Runway safety program or at the same level of priority.  At ARI headquarters, runway safety is the primary focus, while for most personnel in the regions and the field, runway safety is just one aspect of their safety responsibilities.

**Headquarters**

Personnel within ARI can focus all their time on runway safety related activities.  Personnel within LOBs have other priorities competing for their time.  Nonetheless, runway safety is acknowledged as a serious issue.

<u>LOB commitment</u> is demonstrated by:

- Detailing staff to ARI.  The primary LOBs, Airports, Air Traffic, and Flight Standards have detailed staff to the Runway Safety Program
- LOBs dedicating resources to runway safety at the expense of other priorities.
- Executives inquiring about the status of runway safety initiatives.  One interviewee noted that Steve Brown (ATS-1) and Peter Challan (ATS-2) sometimes come over to ARI's office to discuss the progress of the Runway Safety Program.
- A runway safety element being incorporated into the executive performance plans of the Associate Administrators for the primary LOBs, Airports, Air Traffic, and Flight Standards.

  <u>Depth of Commitment</u>
  - LOBs may not prioritize runway safety issues according to ARI preferences.  For example, an AVR interviewee mentioned "in the past 10 years, there were aviation accidents more prominent than ones related to runway safety.  There is no correlation between fatalities and runway incursions."
  - Runway safety initiatives may be viewed as additional work, and thus not as a high priority activity.  An airport certification inspector shared that "runway safety responsibilities are often so enormous that it often cuts into the primary workload."

**Regions**

Personnel detailed to the RSAT, and the RRSPMs can devote themselves to runway safety, but the RAs, and other RSAT members with other collateral responsibilities, have other priorities competing for their attention.  However, these individuals are dedicated to improving runway safety.

LOB commitment is demonstrated by:

- Providing designated points of contact and in some cases detail staff to the RSAT
- Dedicating resources to runway safety at the expense of other priorities

  Depth of Commitment
  - Some interviewees observed a lack of cooperation between LOBs while trying to accomplish runway safety initiatives. Roughly 40% of the interviewees felt that turf and personality issues and differences in opinion on the way to approach runway safety issues hindered progress.
  - An inconsistent message is provided from HQ LOBs to the regions on how to participate in the runway safety program at the regional level.  The message differs both from region to region, and among LOBs within a particular region.
  - Some perceive that LOBs that detail people for the RSAT are more committed to runway safety than those who provide representatives with runway safety as a collateral duty.  One RRSPM stated that it was difficult to get runway safety initiatives accomplished because "they do not have control over the assets provided to work with them, they must accomplish their work through influence."

**Facility**

Airport managers and tower managers have the most tangible connection with runway safety.  They have daily exposure to the potential for runway incursions to occur.  They find ways to improve runway safety, sometimes without regard for what is going on regionally or nationally in the Runway Safety Program.

 LOB commitment is demonstrated by:

- Having dedicated staff to accomplishing runway safety initiatives
- Having a proactive approach to runway safety by Tower Managers, in conjunction with Airport Managers

<u>Depth of Commitment</u>
- Often, there is no link between national and regional initiatives. For example, ARI developed a "special emphasis airports" list of airports they believe warranted RSAT visits.  However, there has been some concern about the composition of this list, and ARI's requirements for the regions.
    - Some regions conduct RSATs at all towered airports, while others focus on larger airports or on airports that ARI labeled "special emphasis airports".
- Runway safety is viewed as part of a larger safety program, thus runway safety initiatives may not be as high of a priority as ARI would like.  All of those interviewed at the facility level felt that runway safety is just a component of their overall job.
- Runway safety has been an important issue for tower controllers and airport managers long before the inception of a Runway Safety Program.
    - At a few facilities the evaluation team was told that it was not ARI or the RRSPMs place to tell facilities what runway safety initiatives they should pursue.  Instead, they felt that facilities should determine what runway safety initiatives were needed and request help from the RRSPM or ARI if needed.
    - Some facilities felt the creation of a Runway Safety Program interfered with regional runway safety procedures, processes, and initiatives already in place and working well, and created confusion.

## Conclusions

- Commitment at headquarters level is heavily dependant on the ARI management team's credibility and ability to build relationships with the LOBs
- Commitment at the regional level is heavily reliant on the RRSPMs' credibility and ability to build relationship with regional LOBs.
- Commitment also varies among regional LOB reps, depending on what's heard from their headquarters organizations.
- At facilities, while runway safety is of utmost importance, it is just one aspect of the overall safety program.

## Recommendations

- ARI should promote the rollout and acceptance of Runway Safety Order 7050.1.
    - In conjunction with LOB managers, they should develop a plan for management to convey the importance of runway safety to personnel at all levels of the Runway Safety Program.

- ARI should continue to use a collaborative development process, used during development of the 2002-2004 Blueprint and the Runway Safety Order 7050.1, for subsequent changes to the Order and the Blueprint.
- ARI, along with the RRSPMs, establish an outreach effort with the FAA organizations in the Runway Safety Program so personnel will better understand the perspective of others within the program:
  - During site visits, ARI personnel should convey their perspective to regional and site personnel.  Conversely, regional and field personnel need to enlighten visitors as to all their non-runway priorities.
  - Allow regional and field personnel to spend time at headquarters shadowing ARI management and staff to better understand priorities at headquarters, especially within ARI.   These visits should be discussed and planned during the annual program planning conferences and included in yearly plans.
- ARI, along with the RRSPMs, consider requiring RSAT members be detailees.

## Summary

In summary, the evaluation, which took place over a five-month period, provided useful insights into the functioning of the Runway Safety Program. Data and analysis suggest that the Runway Safety Program is striving towards successfully meeting runway safety goals. The analysis suggests that the program is making significant progress and that there is extensive support for runway safety initiatives at all levels of the organization.

In addition to the two major findings discussed in some detail above, the evaluation team observed a number of positive initiatives already underway that solidify policies and procedures for the program:
- In conjunction with the involved LOB, ARI has begun preparation of implementation plans for all the objectives described in the 2002-2004 Blueprint.
- Regional Runway Safety Program Managers (RRSPM) have begun working with LOB representatives in their region and with ARI to develop implementation plans for site-specific regional activities.
- The Office of Runway Safety has instituted new briefing and reporting mechanisms to ensure the Administrator and Lines of Business management are kept regularly informed of status and issues relative to runway safety initiatives.
- Standard Operating Procedures and checklists are under development by ARI and the RRSPMs.
- ARI and the RRSPMs have begun evaluation of their current weekly teleconference and quarterly program review structure to increase the value to all participants.
- Training is underway for regional and headquarters personnel for their recently developed database system.

The evaluation team noticed that the current Runway Safety Program is relatively young and is in the early stages of formalizing its policies and procedures. It has a very complex organizational structure that is inherent within the FAA structure. Ongoing initiatives and efforts should go a long way to moving the program towards maturity.
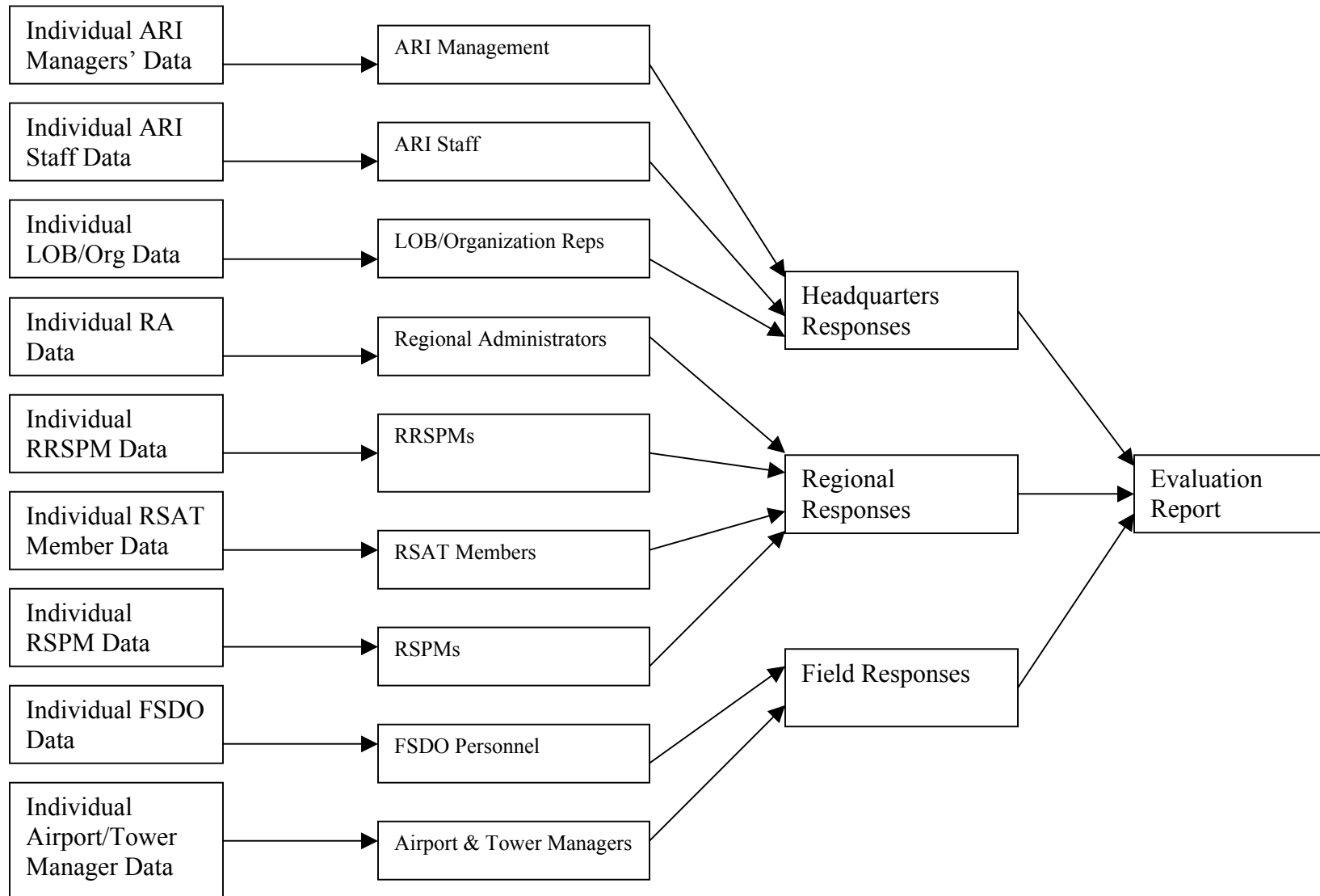
# APPENDIX A:  Chart of Personnel Interviewed

| Interview Group | | # Interviewed |
|---|---|---|
| **Headquarters Level** | | |
| 1    ARI Management Team | | 5 |
| 2    ARI Personnel | | 4 |
| 3    ARI Line of Business Representatives (ITRS members) | AAF, AAR, AVR, AAT, ARP, ASY | 6 |
| 4    Headquarters Line of Business/Organizational Points of Contact | AAT, AAS-300, AFS, ASY-300, ATX-100, AND-400, AND-500, ATP-100, ARN-300, AAR-100, AVN-200, ARC-1 | 12 |
| 5    External Stakeholders | MITRE, Volpe | 2 |
| **Total Number of Headquarters Interviewees** | | **29** |
| **Regional Level** | | |
| 6    Regional Administrators | | 4 |
| 7    Regional Runway Safety Program Managers | | 9 |
| 8    Runway Safety Action Team (RSAT) Members | | 17 |
| 9    Regional Safety Program Managers | | 5 |
| **Total Number of Regional Interviewees** | | **35** |
| **Facility Level** | | |
| 10   Airport and Tower Personnel | | 62 |
| 11   Flight Standards District Office Personnel | | 8 |
| **Total Number of Field Interviewees** | | **70** |
| **Total Number of Interviewees** | | **134** |

**Selection Criteria:**
ARI Management and Staff were already defined.  The Lines of Business Reps that we spoke to were either identified as a main point of contact by someone in ARI, or were identified by higher-level managers as their point of contact for runway safety initiatives.

Regional Administrators and RRSPMs were self-defined.  RSAT members and RSPMs were identified by the RRSPMs in that region. Airport Managers and Tower Managers were also identified by the RRSPMs.

# APPENDIX B: Detailed Data Aggregation Process

| | | |
|---|---|---|
| **Individual ARI Managers' Data** → **ARI Management** | | |
| **Individual ARI Staff Data** → **ARI Staff** | | |
| **Individual LOB/Org Data** → **LOB/Organization Reps** | **Headquarters Responses** | |
| **Individual RA Data** → **Regional Administrators** | | **Evaluation Report** |
| **Individual RRSPM Data** → **RRSPMs** | **Regional Responses** | |
| **Individual RSAT Member Data** → **RSAT Members** | | |
| **Individual RSPM Data** → **RSPMs** | | |
| **Individual FSDO Data** → **FSDO Personnel** | **Field Responses** | |
| **Individual Airport/Tower Manager Data** → **Airport & Tower Managers** | | |

# APPENDIX C: Detailed Summary Matrix

## ARI Evaluation- Summary Themes

| | Headquarters Level (ARI Management Team, ARI Staff, and HQ LOB) | Regional Level (RRPMS, Regional Administrators, RSAT members, and RSPMs) | Facility Level (FSDO personnel and Airport and Tower Managers) |
|---|---|---|---|
| **Is the Runway Safety Office organized and staffed in a way to best accomplish its goals?** | • Most believe ARI is adequately staffed to accomplish runway safety goals, however some indicated that the staff is not always used effectively<br>   o Some believe that ARI detailees should be offered a 2-3 year rotation to ensure consistency<br>   o Several feel Air Traffic and Flight Standards Reps could use more help<br>• Most believe ARI does not provide consistent and adequate support to accomplish runway safety goals<br>• Half feel that ARI should report directly to the Administrator and half feel ARI is positioned well in ATS | • Most feel they need more staff to accomplish their runway safety goals<br>• Most believe that ARI does not provide consistent and adequate direction to accomplish runway safety goals<br>• Most feel that the current regional reporting structure is effective<br>   o Some mentioned this is because it helps garner support from the regional level LOBs | • Most feel they need more staff to accomplish runway safety goals<br>• Most believe that FAA does not provide consistent and adequate direction to accomplish runway safety goals |
| **Are the Office's goals as laid out in the *Blueprint* understood and agreed upon?** | • For the most part, the parties involved understand their responsibilities related to accomplishing *Blueprint* goals, however they have received little guidance for accomplishing their tasks<br>• For the most part, the parties involved (LOB staff) have agreed to their responsibilities as outlined in the *Blueprint*, although no MOAs regarding runway safety responsibilities are in place | • All are familiar with the *Blueprint* and the Order, however most were not assigned specific tasks in the Blueprint<br>• Most regions have a regional runway safety plan<br>• No MOAs regarding runway safety responsibilities are in place | • Most are not familiar with the *Blueprint* |
| **How efficiently are ARI's goals of improving aviation safety being met?** | • Most agree that the number of initiatives and activities for the parties involved are imbalanced (i.e. some LOBs are responsible for more initiatives than others)<br>• All feel they have been successful in accomplishing ARI's goals, however there is no measure of the effectiveness of runway safety initiatives<br>• Most agree that ARI's goals of improving aviation safety are being met in a timely manner | • All they have been successful in implementing runway safety initiatives, however some mentioned that there is no measure of the effectiveness of runway safety initiatives<br>• For the most part, runway safety initiatives have been completed in a timely manner<br>   o Some mentioned that they will not be able to complete their initiatives in a timely manner unless adequate funding is received | • Most feel that they are successful in accomplishing their runway safety goals<br>• Most would like to implement runway safety initiatives that they are currently not implementing |

|  | Headquarters Level (ARI Management Team, ARI Staff, and HQ LOB) | Regional Level (RRPMS, Regional Administrators, RSAT members, and RSPMs) | Facility Level (FSDO personnel and Airport and Tower Managers) |
|---|---|---|---|
| **Do internal organizational processes hinder progress?** | • All agree that internal organizational processes hinder progress. Relevant issues include:<br>  o Blueprint initiatives are not tied to direct causes of runway incursions<br>  o Lack of data sharing<br>  o ARI staff does not work as an integrated team<br>  o Difficulty in obtaining commitment from LOBs to make runway safety a priority<br>  o ARI has no power to enforce policies<br>  o ARI LOB representatives report to two "masters"- ARI and LOB<br>  o "Turf control" issues with the regions<br>  o Current regional reporting structure (i.e. having RRSPMs report to the regional administrators) makes it very difficult for ARI to get things done | • All agree that internal organizational processes hinder progress. Relevant issues include:<br>  o RRSPMs have 3 "masters"- ARI, regional administrator and ARC<br>  o People in HQ do not understand how things operate in the region and those in the region do not understand how things operate in HQ<br>  o Straight-lining to HQ hinders how business is conducted in the region<br>  o Turf and personality issues among the LOBs<br>  o Constant changing of goals by ARI<br>  o Great disparity in support from the LOBs at the regional level for the runway safety efforts<br>  o ARI defines goals late in the fiscal year<br>  o Need to clarify reporting structure between RRSPMs and LOBs<br>  o Mixed messages are sent. The direction received from ARI, may differ from that received from regional administrator.<br>  o Need funding in advance for planning purposes<br>  o Need to decide how best to implement the RIEEP program | • All agree that internal organizational processes hinder progress. Relevant issues include:<br>  o Budget constraints<br>  o Local politics<br>  o Definition established by ARI often cause issues<br>  o Lack of coordination in runway safety office<br>  o Lack of educational awareness<br>  o Hard to reach out to general aviation pilots<br>  o Little feedback from pilots on runway incursions… RIEEP program<br>  o There is mush disagreement regarding the benefits of the RIIEP program, some strongly in favor, other against it<br>  o Approval process for project to difficult since airport must work with 2 different groups within the FAA<br>  o Some<br>  o HQ is poorly responding to their needs<br>  o Air Traffic has no authority to influence other LOBs<br>  o FAA's mentality on doing things is reactive rather than proactive<br>  o Runway safety initiatives are complex and cost too much |
| **To what extent do executives support ARI goals?** | • Most believe executives are supportive of ARI's goals.<br>  o Several people did mention that this is so because runway safety is in the executive's performance plans<br>• Some stated that executives exhibit their support for runway safety initiatives by detaileeing employees to the runway safety program. | • Most believe executives are supportive of runway safety initiatives, however some feel that the implementation and zeal vary with each LOB executive<br>  o Some feel that the HQ LOB executives do not force those in the regions to participate in runway safety initiatives<br>• Some stated that executives exhibit support for runway safety initiatives by providing a budget and by incorporating runway safety goals into the performance plans of all LOB executives. | • Most believe executives are supportive of runway safety initiatives |

| | Headquarters Level (ARI Management Team, ARI Staff, and HQ LOB) | Regional Level (RRPMS, Regional Administrators, RSAT members, and RSPMs) | Facility Level (FSDO personnel and Airport and Tower Managers) |
|---|---|---|---|
| **What additional action can ARI take to support the LOBs?** | • A variety of support needs were mentioned:<br>  o Need better communication between ARI, LOBs, and regions<br>  o Need more funding<br>  o Need a full understanding of goals from the HQ-level down to the field<br>  o Need to receive buy-in from all counterparts<br>  o Need authority over the regions to be more effective<br>  o Need more integration of HQ team<br>  o Need better data analysis to support the basis of initiatives | • A variety of support needs were mentioned:<br>  o Need more funding and personnel<br>  o Need to incorporate runway safety initiatives into performance plans so people are held accountable for the runway safety goals<br>  o Need to visit regions more often to better understand what is going on<br>  o Need to clarify reporting structure to ARI HQ<br>  o ARI and regional administrators should communicate more frequently<br>  o Need more full-time permanent staff in ARI HQ to provide consistent direction<br>  o Need to focus on how to use the data collected on causal factors<br>  o Need more pilot education<br>  o Need support for RIEEP<br>  o Need to physically visit airports to understand the actual issues<br>  o May want to develop a command center to get better "real-time" information | • A variety of support needs were mentioned:<br>  o ARI needs to have more authority<br>  o Need to standardize training for all regions in handling runway safety initiatives<br>  o Need to know the root cause of runway incursions<br>  o Need more staff and funding<br>  o Need to share information on initiatives being conducted in other regions<br>  o Need guidance on what metrics to collect to measure the success of runway safety initiatives<br>  o Need one person dedicated to runway safety at each facility<br>  o Should get a focus group of users and controllers together to see what they need<br>  o Would like ARI to share best practices and lessons learned at other airports<br>  o Need to be recognized for their improvements<br>  o Need more pilot education |

## APPENDIX D:  Acronym List

| | |
|---|---|
| AAF | Office of Airway Facilities |
| AAL | Alaskan Region |
| AAR | Office of Aviation Research |
| AAS | Office of Airport Safety and Standards |
| AAT | Office of Air Traffic |
| ACE | Central Region |
| ACM | Office of Configuration Management and Program Evaluation Staff |
| ACM-10 | Program Evaluation Branch |
| AEA | Eastern Region |
| AFS | Flight Standards Service |
| AGL | Great Lakes Region |
| AND | Office of Communication, Navigation, and Surveillance |
| ANE | New England Region |
| ANM | Northwest Mountain Region |
| AOA | Administrator |
| APP | Office of Airport Planning and Programming |
| ARC | Associate Administrator for Regional and Center Operations |
| ARI | Office of Runway Safety |
| ARI HQ | Office of Runway Safety- Headquarters |
| ARI-100 | Manager, Runway Safety Integrated Team |
| ARP | Associate Administrator for Airports |
| ASO | Southern Region |
| ASW | Southwest Region |
| ASY | Office of System Safety |
| ATC | Air Traffic Control |

| | |
|---|---|
| ATCT | Air Traffic Control Tower |
| ATS | Associate Administrator for Air Traffic Services |
| AVR | Associate Administrator for Regulation and Certification |
| AWP | Western-Pacific Region |
| DOT | Department of Transportation |
| FAA | Federal Aviation Administration |
| FSDO | Flight Standards District Office |
| FY | Fiscal Year |
| GA | General Aviation |
| IG | Inspector General |
| ITRS | Integrated Team for Runway Safety |
| LOB | Line of Business |
| NAS | National Airspace System |
| NTSB | National Transportation Safety Board |
| OE | Operational Error |
| PD | Pilot Deviation |
| RA | Regional Administrator |
| RIIEP | Runway Incursion Information Evaluation Program |
| RRSPM | Regional Runway Safety Program Manager |
| RSAT | Runway Safety Action Team |
| RSPM | Regional Safety Program Manager |
| SPM | Safety Program Manager |
| VPD | Vehicle/Pedestrian Deviation |

# APPENDIX E:  Glossary

**Director, Integrated Team for Runway Safety (ARI-100)**  ARI-100 manages a team of representatives from other FAA Organizations that provide operational expertise to the runway safety program.

**Flight Standards District Office (FSDO)**  A FSDO is a field office that is responsible for certification and operation of air carrier and general aviation aircraft. Some of its responsibilities include certification of airmen and accident investigation.

**Integrated Team for Runway Safety (ITRS)**  The ITRS is comprised of representatives from other FAA organizations that provide operational expertise to the runway safety program.

**National Runway Safety Blueprint**  The National Blueprint for Runway Safety identifies the initiatives the FAA will embark on to improve runway safety.

**Office of Runway Safety (ARI)**  The Office of Runway Safety is responsible for working with other FAA organizations and the aviation community to implement initiatives that increase runway safety.

**Regional Runway Safety Plan**  Each region develops a Regional Runway Safety Plan that identifies the initiatives they will embark on to improve runway safety.

**Regional Runway Safety Program Manager (RRSPM)**  The Regional Runway Safety Program Manager coordinates the runway safety program within their region.

**Regional Safety Program Manager (RSPM)**  The Regional Safety Program Manager, a member of the Flight Standards organization, coordinates the overall safety program within their region.

**Runway Incursion**

The FAA defines a runway incursion as "any occurrence at an airport involving an aircraft, vehicle, person, or object on the ground that creates a collision hazard or results in a loss of separation with an aircraft taking off, intending to take off, landing, or intending to land."

**Runway Safety Action Plan**

Runway Safety Action Plans are developed by the RSAT for each airport with an operational FAA Airport Traffic Control Tower or a Federal Contract Tower. The plan includes runway safety issues and problems at the airport, and specific action items for activities designed to improve runway safety.

**Runway Safety Action Team (RSAT)**

The RSAT is established at either the regional or local level to address existing runway safety problems and issues. The RSAT is responsible for developing a Runway Safety Action Plan for a specific airport.

**Runway Safety Program**

The sum of all runway safety efforts and organizations, at all levels, that carry out runway safety efforts under the leadership of the Office of Runway Safety (ARI).

**Safety Program Manager**

The Safety Program Manager promulgates initiatives proposed by the Regional Safety Program Manager at the facility level.

**Surface Incident**

The FAA defines a surface incident as "an event during which unauthorized or unapproved movement occurs within the movement area or an occurrence in the movement area associated with the operation of an aircraft that affects or could affect the safety of flight"

**Tower**

A terminal facility that provides air traffic control services to aircraft operating in the vicinity of an airport. The tower authorizes aircraft to land and depart at the airport controlled by them.